

Introduction

- Tremendous need for interventions to increase motivation to change among substance abusers
- Contingency management (CM) is one of several empirically-based methods for increasing motivation to change.
- CM is based on extensive basic-science and clinical evidence that drug abuse is influenced by learning and conditioning, and sensitive to systematically applied environmental consequences

Introduction (cont'd)

- CM arranges for systematic consequences for drug use, abstinence, and other therapeutic goals (e.g., counseling attendance, medication compliance).
- Reinforcement and punishment contingencies are effective, but former are preferred by clients and clinicians.
- To be effective, must be applied systematically, with minimal delay, and based on precise information regarding target response.

Goals for Today's Talk

1. Introduce contingency management (CM)
2. Review some empirical support for CM in reducing substance abuse
3. Facilitate discussion on the use of CM in community settings

Examples of Efficacious CM Intervention for Increasing Cocaine Abstinence

- Voucher-based reinforcement therapy
- Shown in a series of randomized clinical trials to increase abstinence in cocaine-dependent patients
- Four trials: Seminal trial, isolating effects of vouchers, extension to inner-city users

National Institute on Drug Abuse

THERAPY MANUALS FOR DRUG ADDICTION

Manual 2

A Community Reinforcement Plus Vouchers Approach: Treating Cocaine Addiction

U.S. Department of Health and Human Services
National Institutes of Health

Background References

Higgins, S.T., & Silverman, K. (1999). Motivating behavior change among illicit-drug abusers: Research on contingency management interventions. Washington, DC, American Psychological Association.

Petry, N.M. (2000). A comprehensive guide to the application of contingency management procedures in clinical settings. Drug and Alcohol Dependence, 58, 9-26.

Treatment Procedures

- Weeks 1-12: Twice weekly counseling and thrice weekly urinalysis, Weeks 13-24: once weekly counseling and twice weekly urinalysis, Months 7-12: Aftercare--once monthly check-in with counselor and random urinalysis.
- Vouchers, reciprocal relationship counseling, functional analysis, vocational assistance, alter recreational/social practices, monitored antabuse therapy.

Voucher Program (weeks 1-12 only)

- Specimens that were negative for benzoylecgoine earned pts recorded on vouchers. Pts were worth equiv. of \$.25 each.
- 1st neg. test = 10 pts @ \$.25/pt = \$2.50. Value of vouchers for each subsequent consecutive negative test increased by 5 pts; e.g., 2nd = 15 pts, 3rd = 20 pts, etc.
- Equivalent of \$10 bonus earned for every 3 consecutive negative tests.

Voucher Program (cont'd)

(weeks 1-12 only)

- Cocaine-positive tests or failure to give a specimen reset vouchers back to initial value
- 5 consecutive negative tests returned vouchers back to the value preceding reset
- Vouchers were exchangeable for retail items in community
- No cash was ever given to patients
- All purchases were made by staff and had to be deemed by therapists to be consistent w/CRA treatment goals

Achieving Cocaine Abstinence With a Behavioral Approach

Stephen T. Higgins, Ph.D., Alan J. Budney, Ph.D., Warren K. Bickel, Ph.D.,
John R. Hughes, M.D., Florian Foerg, B.A., and Gary Badger, M.S.

Objective: The authors compared the efficacy of a multicomponent behavioral treatment and drug abuse counseling for cocaine-dependent individuals. Method: The 38 patients were enrolled in outpatient treatment and were randomly assigned to the two treatments. Counseling in the behavioral treatment was based on the community reinforcement approach, while the drug abuse counseling was based on the disease model of dependence and recovery. Patients in the behavioral, but not the drug counseling, treatment also received incentives contingent on submitting cocaine-free urine specimens. Results: Of the 19 patients who received behavioral treatment, 58% completed 24 weeks of treatment, versus 11% of the patients who received counseling. In the behavioral treatment group 68% and 42% of the patients achieved at least 8 and 16 weeks of documented continuous cocaine abstinence, respectively, versus 11% and 5% in the drug abuse counseling group. Conclusions: This multicomponent behavioral treatment appears to be an effective intervention for retaining outpatients in treatment and establishing cocaine abstinence.

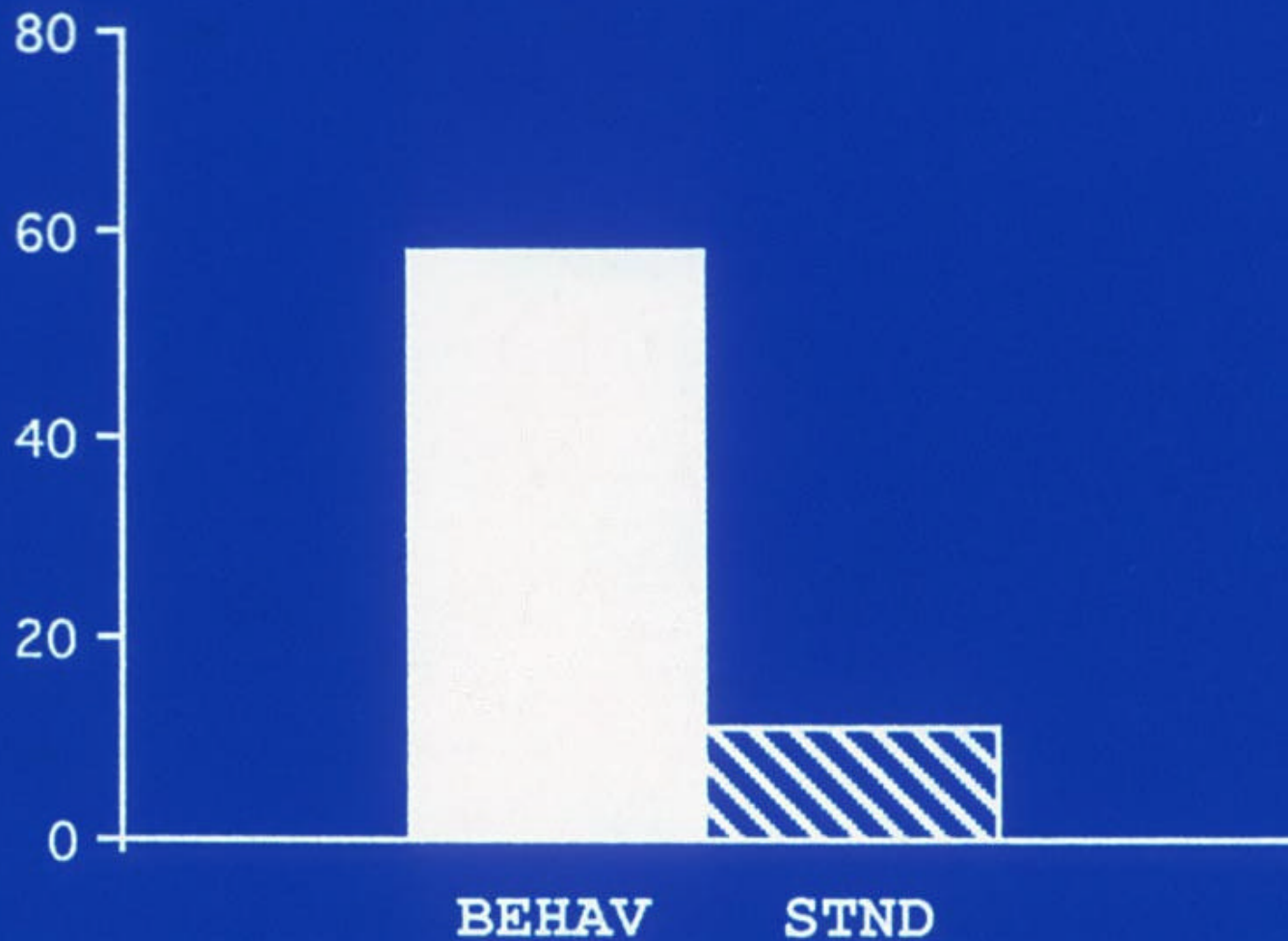
(Am J Psychiatry 1993; 150:763-769)

Trial Comparing Behavioral VS. Standard Care

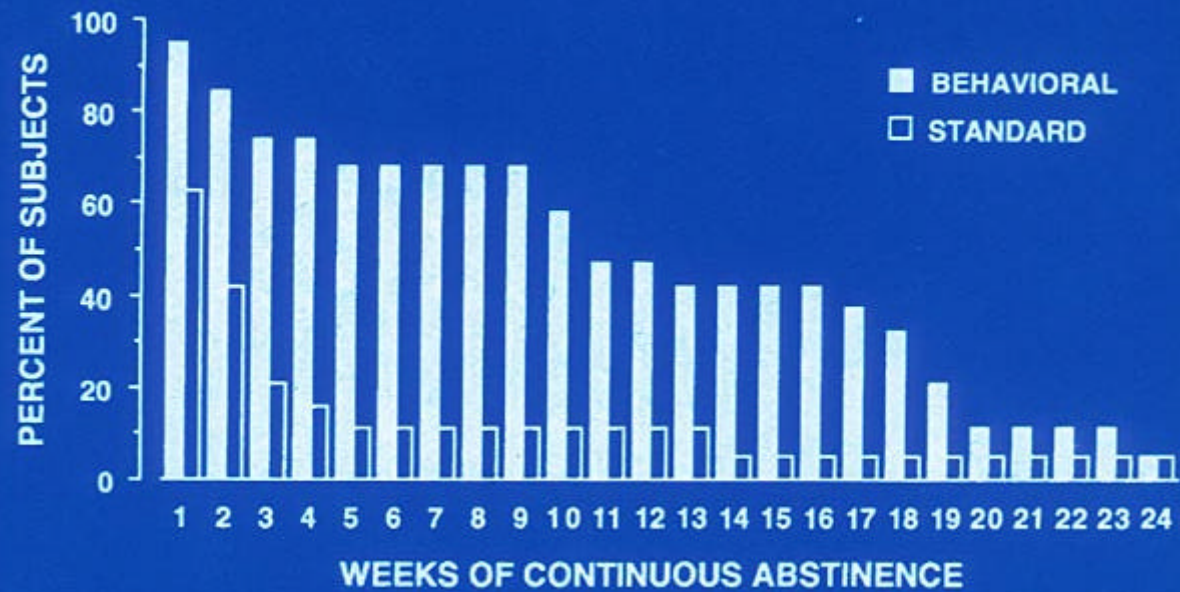
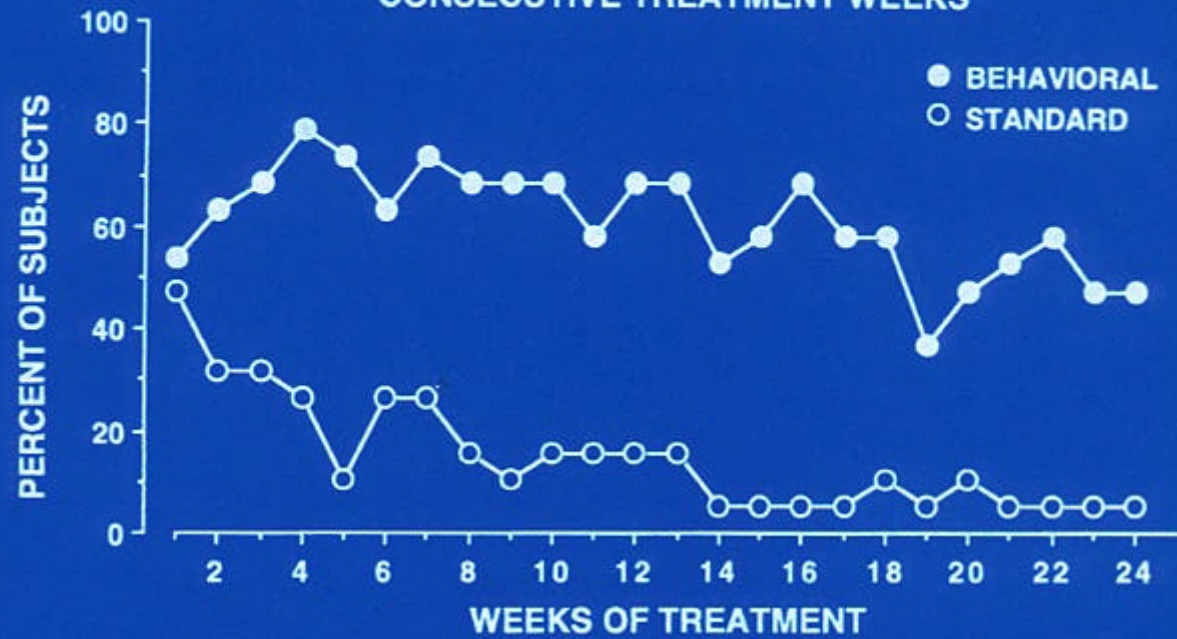
- Standard drug abuse counseling based on disease model and 12-steps
- 38 cocaine-dependent subjects randomized to two treatments (19/gp)
- 6 months treatment and 6 months of follow-up
- Behavioral treatment same as just described

TREATMENT RETENTION

% OF SUBJECTS WHO COMPLETED
24 WEEKS OF TREATMENT



COCAINE ABSTINENCE DURING CONSECUTIVE TREATMENT WEEKS



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Incentives Improve Outcome in Outpatient Behavioral Treatment of Cocaine Dependence

*Stephen T. Higgins, PhD; Alan J. Budney, PhD; Warren K. Bickel, PhD;
Florian E. Foerg; Robert Donham, MA; Gary J. Badger, MS*

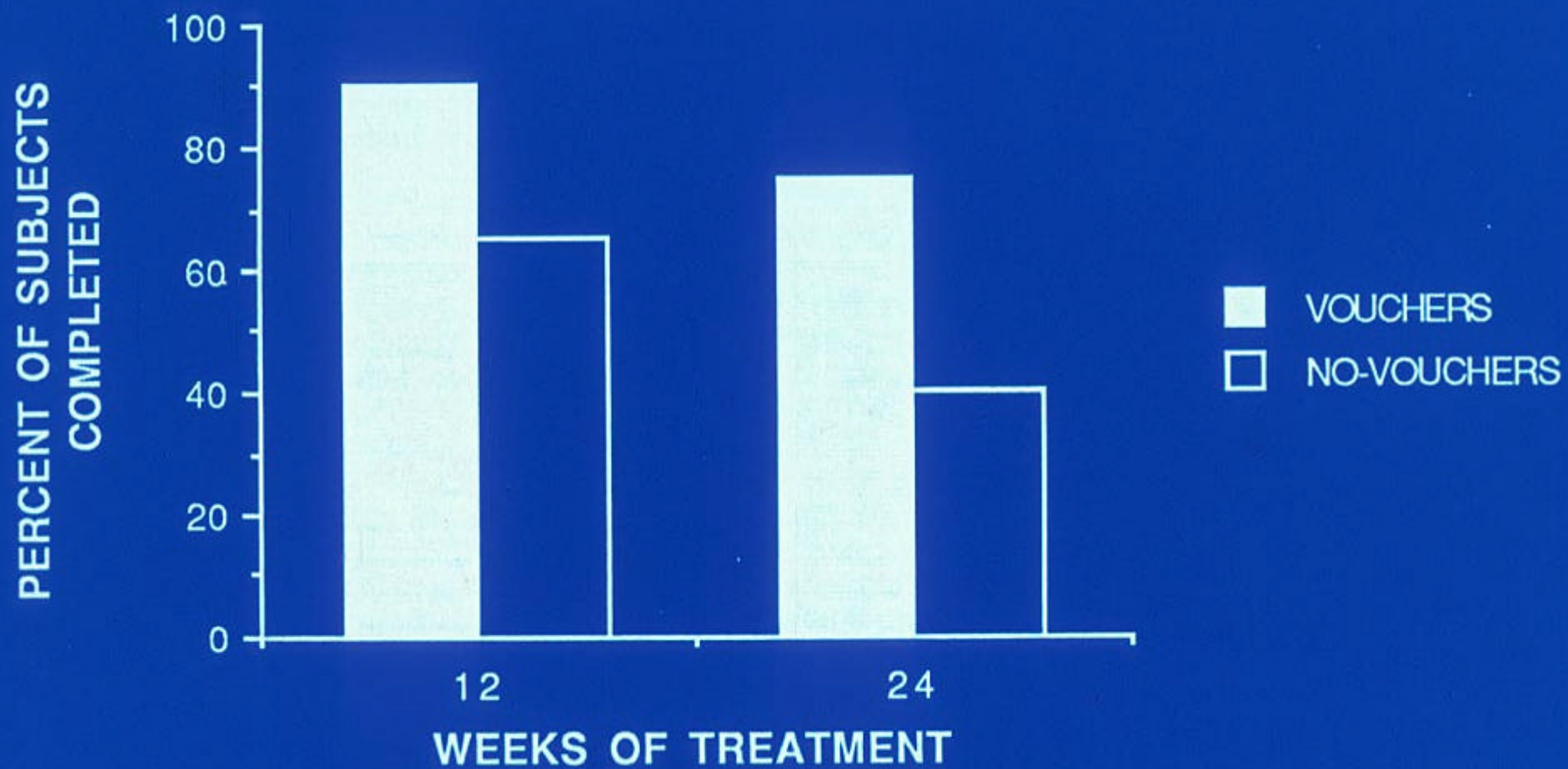
Method

- 40 pts. Randomly assigned to one of two treatment groups (20/gp)
- Treatment duration was 24 wks for both groups. 2 x weekly counseling and 3 x weekly urinalysis in weeks 1-12; reduced to 1 x weekly counseling and 2 x weekly urinalysis in weeks 13-24

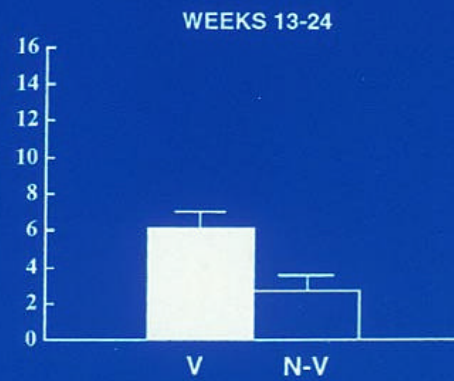
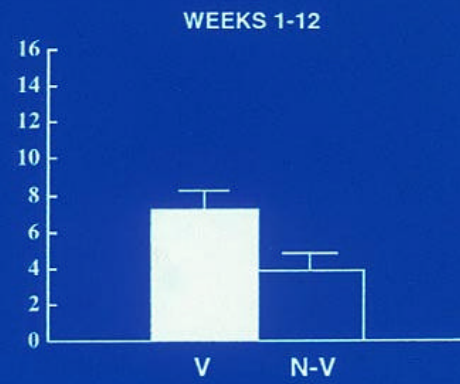
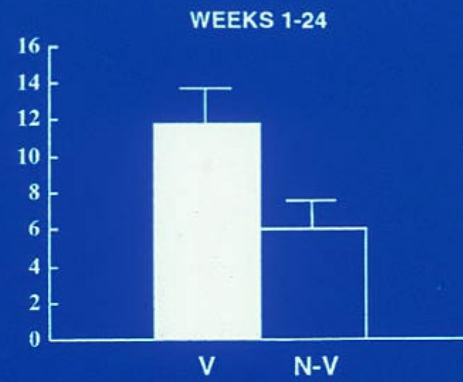
Method (cont'd)

- Counseling in both groups was identical and based on the Community Reinforcement Approach (CRA)
- Only difference between groups was one group received vouchers contingent on cocaine-negative urinalysis results in weeks 1-12. During weeks 13-24, both groups received only a single \$1 Vermont State Lottery ticket/cocaine-negative test.

TREATMENT RETENTION



MEAN WEEKS OF CONTINUOUS COCAINE ABSTINENCE



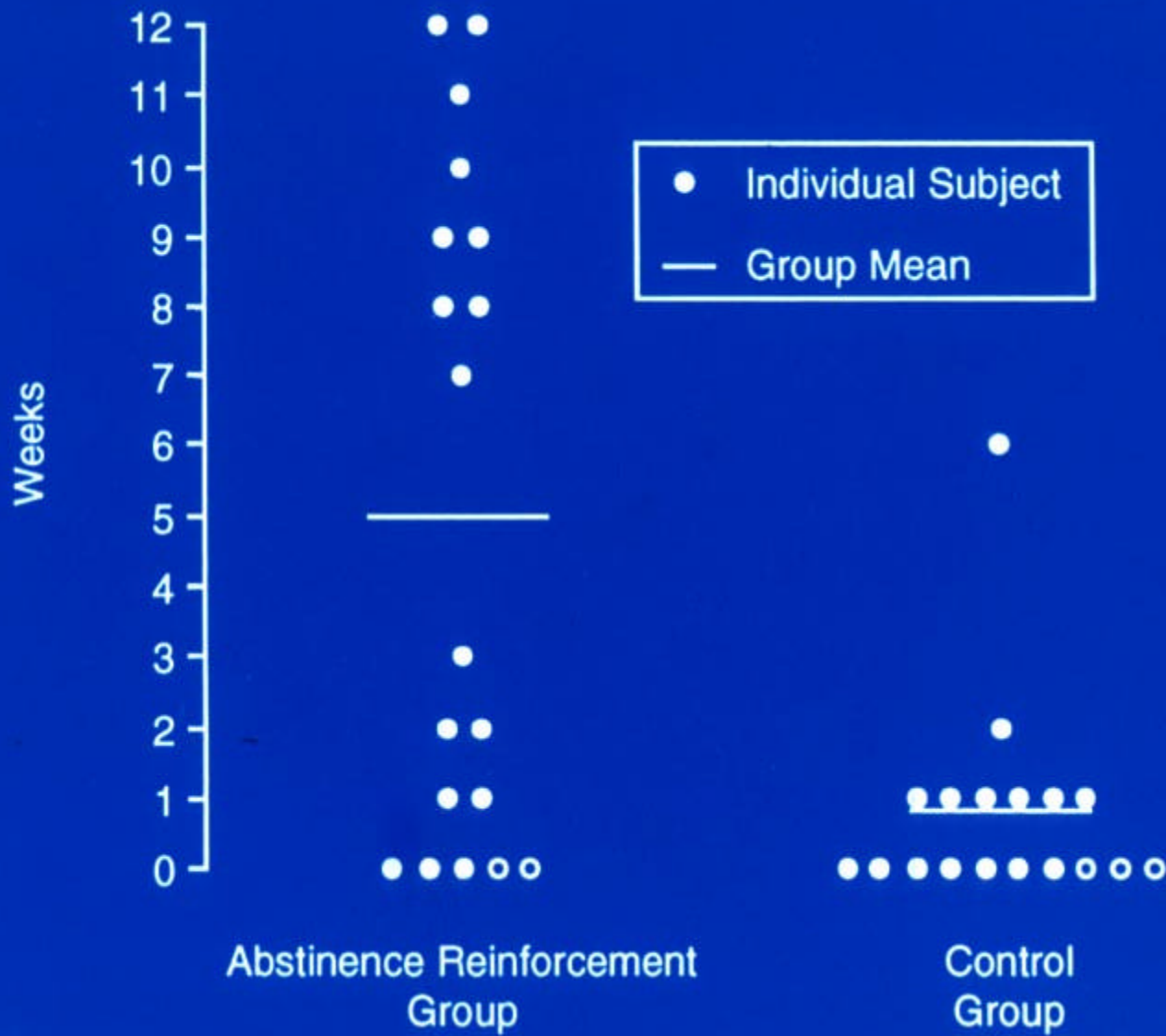
Sustained Cocaine Abstinence in Methadone Maintenance Patients Through Voucher-Based Reinforcement Therapy

Kenneth Silverman, PhD; Stephen T. Higgins, PhD; Robert K. Brooner, PhD; Ivan D. Montoya, MD; Edward J. Cone, PhD; Charles R. Schuster, PhD; Kenzie L. Preston, PhD

(Silverman et al)

Subjects/Procedures

1. 37 methadone maintenance patients (73% male) who used cocaine regularly (positive $\geq 33\%$ urinalysis tests).
2. All used cocaine intravenously.
3. 54% Caucasian, 46% African American
4. Randomized to voucher reinforcement contingent on cocaine-negative urinalysis or yoked control group
5. Study was 12 weeks and voucher program was identical to Higgins et al. (1994)



Contingent Reinforcement Increases Cocaine Abstinence During Outpatient Treatment and 1 Year of Follow-Up

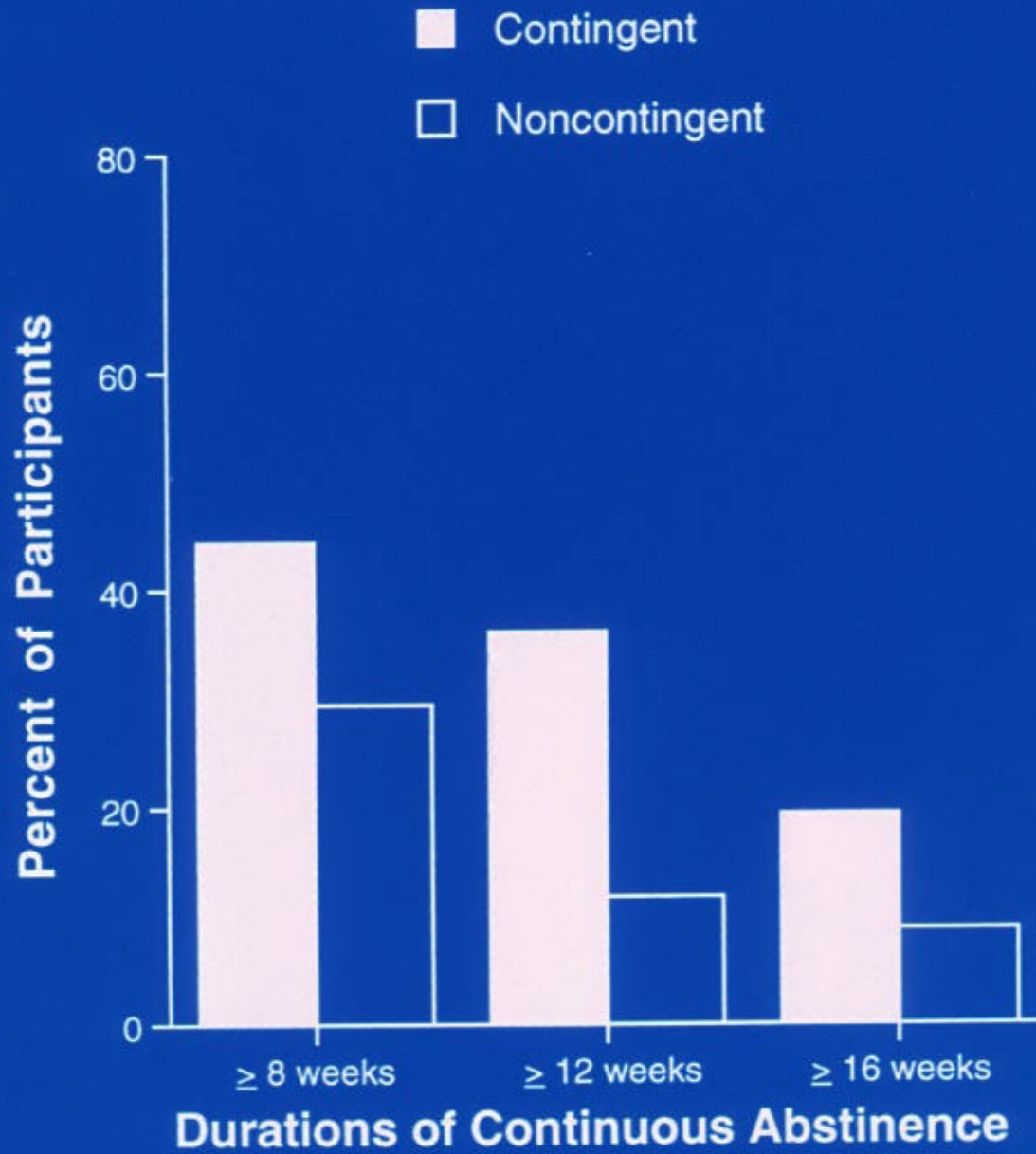
Stephen T. Higgins, Conrad J. Wong, Gary J. Badger, Doris E. Haug Ogden, and Robert L. Dantona
University of Vermont

This study assessed whether contingent incentives can be used to reinforce cocaine abstinence in dependent outpatients. Seventy cocaine-dependent outpatients were randomized into 2 conditions. All participants received 24 weeks of treatment and 1 year of follow-up. The treatment provided to all participants combined counseling based on the community reinforcement approach with incentives in the form of vouchers exchangeable for retail items. In 1 condition, incentives were delivered contingent on cocaine-free urinalysis results, whereas in the other condition incentives were delivered independent of urinalysis results. Abstinence-contingent incentives significantly increased cocaine abstinence during treatment and 1 year of follow-up compared with noncontingent incentives.

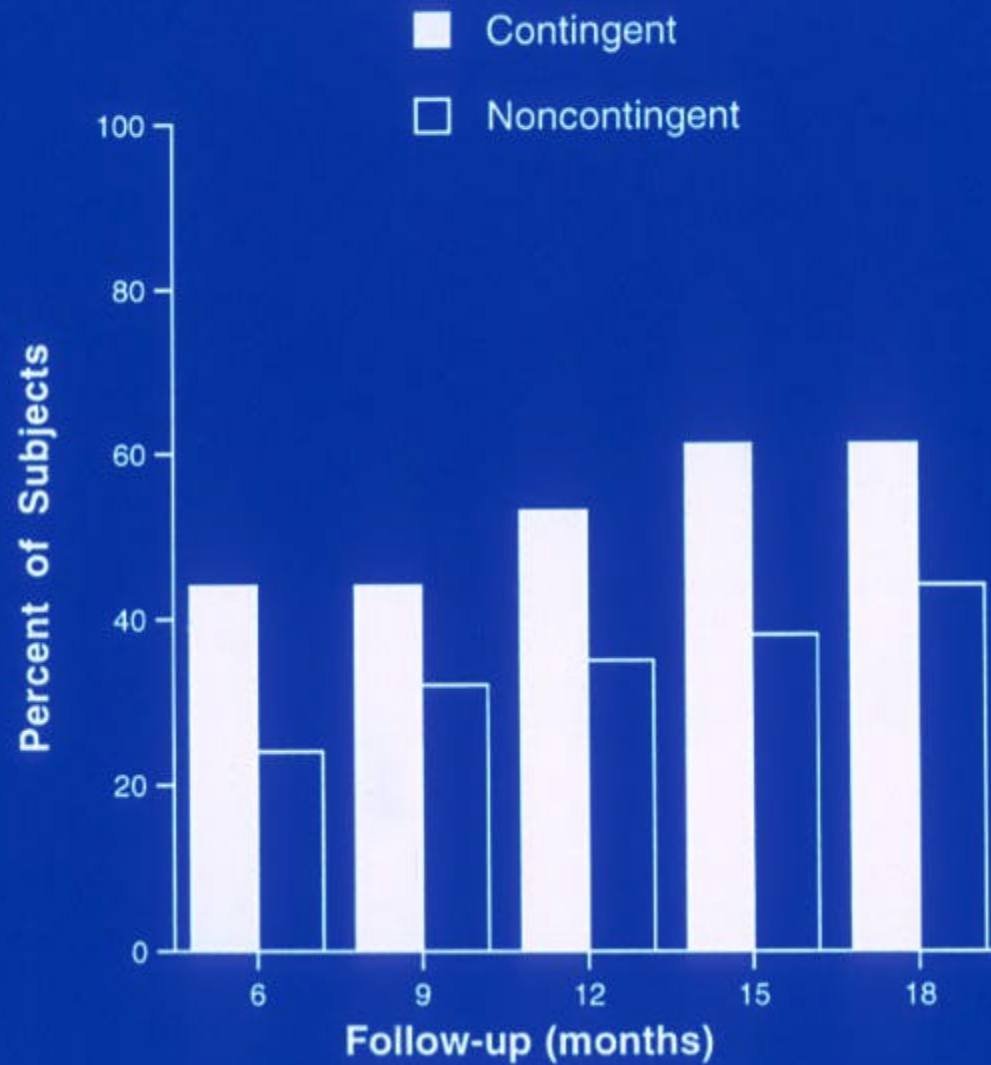
Methods

- 70 cocaine-dependent adults
- Randomized to two treatments
- All get CRA + vouchers
- Only difference is one group gets vouchers contingent on cocaine abstinence, while other group gets them noncontingently (yoked control)
- 24 weeks treatment and 1 year of follow-up

Continuous Cocaine Abstinence



Abstinence Post-Treatment (Point Prevalence)



Other Special Populations

- Homeless substance abusers
- Pregnant substance abusers
- HIV-infected substance abusers
- TB-infected substance abusers
- Mothers (smokers) of asthmatic children

Important Consideration When Designing CM Interventions

- Detailed behavioral contract
- Objective verification
- Consistency
- Frequency
- Immediacy
- Magnitude
- Escalating reinforcers and bonuses

Elements for Consideration

- Intense monitoring and frequent reinforcement of success in early stages of treatment (e.g., 12-24 weeks)
- Be creative in development of reinforcement system
- Consider reinforcement system for prevention and treatment purposes

Elements of Consideration (cont'd)

- Survey population to identify and evaluate potential reinforcers (e.g., Amass et al., 1996, Journal of Substance Abuse Treatment, 13, 43-49)
- Do not underestimate the importance of explicit, short-term material and social reinforcement to longer-term success